



Si2301CDS vs. Si2301BDS

Description: P-Channel, 20-V (D-S) MOSFET**Package:** SOT-23**Pin Out:** Identical

Part Number Replacements: Si2301CDS-T1-GE3 replaces Si2301BDS-T1-GE3
 Si2301CDS-T1-E3 replaces Si2301BDS-T1-E3
 Si2301CDS-T1-GE3 or Si2301CDS-T1-E3 replaces Si2301BDS-T1

ABSOLUTE MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$, unless otherwise noted)					
PARAMETER		SYMBOL	Si2301CDS	Si2301BDS	UNIT
Drain-Source Voltage		V_{DS}	- 20	- 20	V
Gate-Source Voltage		V_{GS}	± 8	± 8	
Continuous Drain Current	$T_A = 25\text{ }^\circ\text{C}$	I_D	- 2.3	- 2.4	A
	$T_A = 70\text{ }^\circ\text{C}$		- 1.8	- 1.9	
Pulsed Drain Current		I_{DM}	- 10	- 10	
Continuous Source Current (MOSFET Diode Conduction)		I_S	- 0.72	- 0.72	
Power Dissipation	$T_A = 25\text{ }^\circ\text{C}$	P_D	0.86	0.9	W
	$T_A = 70\text{ }^\circ\text{C}$		0.55	0.57	
Operating Junction and Storage Temperature Range		T_J and T_{stg}	- 55 to 150	- 55 to 150	$^\circ\text{C}$
Maximum Junction-to-Ambient		R_{thJA}	145	145	$^\circ\text{C/W}$

SPECIFICATIONS ($T_J = 25\text{ }^\circ\text{C}$, unless otherwise noted)									
PARAMETER	SYMBOL	Si2301CDS			Si2301BDS			UNIT	
		MIN.	TYP.	MAX.	MIN.	TYP.	MAX.		
Static									
Gate-Threshold Voltage	$V_{GS(th)}$	- 0.40		- 1.0	- 0.45		- 0.95	V	
Gate-Body Leakage	I_{GSS}			± 100			± 100	nA	
Zero Gate Voltage Drain Current	I_{DSS}			- 1			- 1	μA	
On-State Drain Current	$V_{GS} = - 4.5\text{ V}$	$I_{D(on)}$	- 6		- 6			A	
	$V_{GS} = - 2.5\text{ V}$		NS		- 3				
Drain-Source On-Resistance	$V_{GS} = - 4.5\text{ V}$	$R_{DS(on)}$		0.090	0.112		0.080	0.100	Ω
	$V_{GS} = - 2.5\text{ V}$			0.110	0.142		0.110	0.150	
Forward Transconductance	g_{fs}		9.5			6.5		S	
Diode Forward Voltage	V_{SD}		- 0.8	- 1.2		- 0.8	- 1.2	V	
Dynamic									
Total Charge	Q_g		5.5	10		4.5	10	nC	
Gate-Source Charge	Q_{gs}		0.7			0.7			
Gate-Drain Charge	Q_{gd}		1.3			1.1			

Specification comparisons are supplied as a courtesy to compare two devices and do not constitute a commercial product datasheet or any guarantee of identical performance. Designers should refer to the appropriate datasheets of the same number for guaranteed specification limits.